

REMARKS

In the Final Office Action¹, the Examiner:

- a) rejected claim 1 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,528,732 to Okubora et al. ("Okubora") in view of U.S. Patent No. 5,103,288 to Sakamoto et al. ("Sakamoto") and U.S. Patent No. 5,531,945 to Ohya et al. ("Ohya");
- b) rejected claims 1-4, 6, 8, and 9 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of Applicants' Admitted Prior Art ("APA");
- c) rejected claim 5 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of APA and further in view of U.S. Patent No. 4,296,424 to Shibasaki et al. ("Shibasaki");
- d) rejected claim 7 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of APA and further in view of U.S. Patent Pub. No. 2002/0100610 to Yasuda et al. ("Yasuda");
- e) rejected claims 10 and 11 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of APA and further in view of U.S. Patent No. 6,722,031 to Japp et al. ("Japp"); and
- f) rejected claim 12 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of APA and Japp and further in view of U.S. Patent No. 6,646,334 to Hur ("Hur").

Upon entry of this Amendment, claims 1-16 remain pending, with claims 1-12 under current examination, and claims 13-16 withdrawn from consideration.

By this amendment, Applicants propose to amend claim 1 to more appropriately define the present invention. Amended independent claim 1 would recite, in part, "a wiring substrate

having an insulating substrate with a porous structure including continuous pores and wiring conductors ~~selectively formed in~~ located within the pores.” Support for this amendment may be found in the specification at, for example, page 5, lines 17-20.

Rejection of Claim 1 under 35 U.S.C. § 103(a)

Applicants traverse the rejection of claim 1 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of Sakamoto and Ohya. Applicants respectfully disagree with the Examiner’s arguments and conclusions. A *prima facie* case of obviousness cannot be established.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). M.P.E.P. § 2142.

At least the first requirement for establishing a *prima facie* case of obviousness cannot be met, because Okubora, Sakamoto, and Ohya, taken alone or in combination, do not teach or suggest each and every element of Applicants’ independent claim 1.

The Examiner alleges that Okubora discloses an electronic device comprising of a wiring substrate having an insulating substrate, wiring conductors formed in the substrate, and the electronic device connected to the wiring connectors. In addition, the Examiner admitted that Okubora does not teach “a substrate with a porous structure” (Office Action, page 4). The Examiner asserted that Sakamoto discloses “a substrate with a porous structure” (Office Action, page 4). However, Sakamoto merely teaches forming a porous insulating film 104, which is not a substrate, and provides no teaching of wires in the pores. See Sakamoto, col. 3,

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement of characterization in the Office Action.

lines 1-8. Therefore, Sakamoto fails to teach or suggest at least “a wiring substrate having an insulating substrate with a porous structure including continuous pores and wiring conductors located within the pores,” as recited in amended claim 1.

In addition, the Examiner admitted that Okubora does not teach “a porous structure including continuous pores” (Office Action, page 5). The Examiner asserted that Ohya, discloses “a porous structure including continuous pores” (Office Action, page 5). However, Ohya fails to cure the deficiencies of Okubora and Sakamoto. Ohya discloses a base board for printed wiring, where the base board comprises continuous porous material wrapped in a cloth. See Ohya, Abstract. Ohya does not teach forming wires in the pores of the base board, but merely teaches forming conductors **on** the base board or **in the through holes** in the base board. Therefore, Ohya fails to teach or suggest at least “a wiring substrate having an insulating substrate with a porous structure including continuous pores and wiring conductors located within the pores,” as recited in amended claim 1.

For at least the reason that the cited references fail to teach or suggest each and every element of claim 1, a *prima facie* case of obviousness cannot be established for claim 1. Independent claim 1 is therefore allowable. Therefore, Applicants request that the improper 35 U.S.C. § 103(a) rejection be withdrawn.

Rejection of Claims 1-4, 6, 8, and 9 under 35 U.S.C. § 103(a)

Applicants traverse the rejection of claims 1-4, 6, 8, and 9 under 35 U.S.C. § 103(a) as being obvious over Okubora in view of APA. Applicants respectfully disagree with the Examiner’s arguments and conclusions. A *prima facie* case of obviousness cannot be established.

At least the first requirement for establishing a *prima facie* case of obviousness cannot be met, because Okubora and APA, taken alone or in combination, do not teach or suggest each and every element of Applicants’ independent claim 1 from which claims 2-4, 6, 8, and 9 depend.

Applicants have already demonstrated previously that Okubora does not teach or suggest each and every element of Applicants' independent claim 1 from which claims 2-4, 6, 8, and 9 depend. In addition, the Examiner admitted that Okubora does not teach "a substrate with a porous structure including continuous pores" (Office Action, page 6).

The Examiner asserted that APA, discloses that "it was well known to use a three-dimensional structure of the substrate including continuous pores" (Office Action, page 6). However, APA fails to cure the deficiencies of Okubora. APA merely teaches a multilayered wiring substrate including porous sheets. APA does not teach or suggest at least, "an electronic device directly connected to said wiring conductors located within the pores," as recited in independent claim 1 and required by dependent claims 2-4, 6, 8, and 9.

For at least the reasons stated, Okubora and APA do not teach or suggest all the features recited in independent claim 1 and required by dependent claims 2-4, 6, 8, and 9. No *prima facie* obviousness of claims 1-4, 6, 8, and 9 has been established. Independent claim 1 is therefore allowable. Moreover, dependent claims 2-4, 6, 8, and 9 are also allowable at least by virtue of their dependence from allowable base claim 1. The improper 35 U.S.C. § 103(a) rejection should be withdrawn.

Rejection of Claims 5, 7, and 10-12 under 35 U.S.C. § 103(a)

Regarding the rejections of claims 5, 7, and 10-12 under 35 U.S.C. § 103(a), Applicants submit that these rejections are each based on a combination of Okubora and one or more other references, including Shibasaki, Yasuda, Japp, and Hur. As noted above, Okubora fails to teach or suggest each and every element of claim 1, from which claims 5, 7, and 10-12 depend, and none of Shibasaki, Yasuda, Japp, and Hur overcomes the deficiencies of Okubora. In particular, as noted above, Okubora fails to teach or suggest "a wiring substrate having an insulating substrate with a porous structure including continuous pores and wiring conductors located within the pore," as recited in amended claim 1. As Applicants pointed out in the Remarks section of the Amendment filed on January 30, 2006, none of Shibasaki, Yasuda,

Japp, and Hur discloses a substrate with a porous structure. See, Amendment of January 30, 2006, pages 8-11. Therefore, none of Shibasaki, Yasuda, Japp, and Hur teaches or suggests at least "a wiring substrate having an insulating substrate with a porous structure including continuous pores and wiring conductors located within the pore," as recited in amended claim 1.

Consequently, no *prima facie* case of obviousness can be established and the rejection of claims 5, 7, and 10-12 under 35 U.S.C. § 103(a) is improper and should be withdrawn.

Conclusion

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-12 in condition for allowance. Applicants submit that the proposed amendment of claim 1 does not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.


Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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